

INTERACTIVE WATER EFFECTS USING TEXTURE COORDINATE SHIFTING

ABSTRACT OF THE DISCLOSURE

5 A system and process for adding a photorealistic rendering of a body of
water to a virtual 3D scene or image and creating a video therefrom having
interactive water effects. A region of water is added to an image by adding an
area depicting the original scene as it would appear if reflected by still body of
10 water. Then, the appearance of the added water region is distorted over a series
of image frames in such a way as to simulate how the reflected scene would look
if the surface of the water were in motion. The water can have dynamic waves
and the user can interact with the water in numbers of ways, including generating
ripples on the water surface and creating rain. In addition, these effects can be
15 achieved at full screen resolution with the use of the latest graphics hardware by
employing a texture shifting technique.